This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A method of predicting moisture absorption rate in hygroscopic materials, the method comprising the steps of:

i) drying a hygroscopic material for a time sufficient to remove residual moisture;

ii) weighing said hygroscopic material;

iii) placing said hygroscopic material within a substantially air tight chamber having a controllable atmosphere;

iv) exposing ~~the~~ said hygroscopic material to an environment of known controlled relative humidity in an inert gaseous atmosphere and controlled temperature;

v) collecting data of moisture absorption over time and using a curve fitting technique to fit the data to a curve using the equation

$$Y = aX^b$$

where: a is a constant ranging from about 0.001 to about 1.0;
b is a constant ranging from about 0.01 to about 10.0;
Y is the mass increase in grams H20 per 100 grams of material; and
X is humidification time in hours;

finding said constants a and b at said known controlled relative humidity and said controlled temperature for said hygroscopic material, assuming constant b is a constant value for ~~the~~ said hygroscopic material, and constant a is a variable that is directly proportional to the relative humidity in an inert gaseous atmosphere; and

modifying the variable a and holding the variable b constant to generate an expected moisture absorption mass gain versus time curve for a different specific relative humidity value.

Claim 2 (currently amended): The method of claim 1 wherein the known relative humidity ranges from about 5 to about 100%.

Claim 3 (currently amended): The method of claim 1 wherein ~~the~~ said hygroscopic material is a Plastic Encapsulated Chip (PEM).

Claim 4 (original): The method of claim 2 wherein the material is a PEM.

Claim 5 (original): The method of claim 1 wherein relative humidity within said chamber is provided by wetted fibrous material disposed within said chamber.

Claim 6 (original): The method of claim 5 wherein said atmosphere is circulated by a fan positioned within said chamber.

Claim 7 (original): The method of claim 1 further including an atmospheric probe positioned within said chamber for recording atmospheric conditions.

Claim 8 (original): The method of claim 5 further including an atmospheric probe positioned within said chamber for recording atmospheric conditions.

Claim 9 (original): The method of claim 6 further including an atmospheric probe positioned within said chamber for recording atmospheric conditions.

Claim 10 (original): The method of claim 1 wherein relative humidity within said chamber is controlled by gas injected into said chamber via a gas inlet.

Claim 11 (original): The method of claim 10 further including an atmospheric probe positioned within said chamber for recording atmospheric conditions.

Claim 12 (currently amended): The method of claim 5 wherein the known relative humidity ranges from about 5 to about 100%.

Claim 13 (original): The method of claim 5 wherein the material is a PEM.

Claim 14 (original): The method of claim 12 wherein the material is a PEM.

Claim 15 (currently amended): The method of claim 10 wherein the known relative humidity ranges from about 5 to about 100%.

Claim 16 (original): The method of claim 10 wherein the material is a PEM.

Claim 17 (original): The method of claim 15 wherein the material is a PEM.

Claim 18 (currently amended): A method of predicting moisture absorption rate in PEM materials, the method comprising the steps of:

i) drying a PEM for a time sufficient to remove residual moisture;

ii) weighing said PEM;

iii) placing said PEM within a substantially air tight chamber having a controllable atmosphere;

iv) exposing the PEM to an environment having a controlled relative humidity ranging from 5 to 100% in an inert gaseous atmosphere and controlled temperature;

v) collecting data of moisture absorption over time and using curve fitting technique to fit the data to a curve using the equation

$$Y = aX^b$$

where: a is a constant ranging from about 0.001 to about 1.0;

b is a constant ranging from about 0.01 to about 10.0;

Y is the mass increase in grams H20 per 100 grams of said PEM; and

X is humidification time in hours;

finding said constants a and b at said known controlled relative humidity and said controlled temperature for said PEM, assuming constant b is a constant value for the PEM, and constant a is a variable that is directly proportional to the relative humidity in an inert gaseous atmosphere; and modifying the variable a and holding the variable b constant to generate an expected moisture absorption mass gain versus time curve for a different specific relative humidity value.

Claim 19 (original): An apparatus for measuring and predicting moisture absorption rate in materials, the apparatus comprising:

i) a substantially air-tight container adapted for placing a test specimen therein;

ii) means for establishing controlled atmospheric conditions in said container; and

iii) means for monitoring said atmospheric conditions within said container.

Claim 20 (currently amended): The apparatus of claim 19 further ~~including~~ includes:

means for circulating said atmosphere within said container.

Claim 21 (new): A method of predicting moisture absorption rate in hygroscopic materials, the method comprising the steps of:

vi) drying said hygroscopic material for a time sufficient to remove residual moisture;

vii) weighing said hygroscopic material;

viii) placing said hygroscopic material within a substantially air tight chamber having a controllable atmosphere;

ix) exposing said hygroscopic material to an environment of known controlled relative humidity in an inert gaseous atmosphere and controlled temperature;

x) collecting data of moisture absorption over time and using a curve fitting technique to fit the data to a curve using the equation

$$Y = aX^b$$

where: a is a constant ranging from about 0.001 to about 1.0;
b is a constant ranging from about 0.01 to about 10.0;
Y is the mass increase in grams H20 per 100 grams of material; and
X is humidification time in hours;

finding said constants a and b at said known controlled relative humidity and said controlled temperature for said hygroscopic material, assuming constant b is a constant value for said hygroscopic material, and constant a is a variable that is directly proportional to the relative humidity in an inert gaseous atmosphere;

modifying the variable a and holding the variable b constant to generate an expected moisture absorption mass gain versus time curve for a different specific relative humidity value; and

wherein the relative humidity within said chamber is provided by wetted fibrous material disposed within a chamber.

Claim 22 (new): The method of claim 21 wherein said atmosphere is circulated by a fan positioned within said chamber.

Claim 23 (new): The method of claim 21 further including an atmospheric probe positioned within said chamber for recording atmospheric conditions.

Claim 24 (new): The method of claim 21 wherein relative humidity within said chamber is controlled by gas injected into said chamber via a gas inlet.

Claim 25 (new): The method of claim 21 wherein the known relative humidity ranges from about 5 to about 100%.

Claim 26 (new): The method of claim 21 wherein the material is a PEM.